

WWW Table of Radioactive Isotopes

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The WWW Table of Radioactive Isotopes provides Internet access to radioactive decay data for over 3000 isotopes and isomers. The data are mainly from the Evaluated Nuclear Structure Data File (ENSDF) and were further edited for consistency and completeness. The database is maintained at LBNL and data are provided at <http://nucleardata.nuclear.lu.se/nucleardata/toi/> on the Lund University server.

The data provided include parent half-life, mass, production modes, literature cut-off date, and a link to all references compiled in the Nuclear Science Reference (NSR) file since the cut-off. A list of decay properties including all decay modes, Q-values, and primary references for each parent is given.

The parent information is followed by tables listing the energies and intensities of x-rays, gamma rays, alpha particles and betas emitted by decay of the parent. Links are also provided to display decay scheme drawings and tables on the WWW with Isotope Explorer 3.0. In addition, beta spectra, binned in 1-keV intervals, can be displayed on the WWW with an interactive spectrum viewer. In figure 1 we show an example for ¹⁴⁴Ba decay. We are planning to add

internal bremsstrahlung and atomic/Auger electron spectra in the future.

The Table of Radioactive Isotopes database can also be interactively searched on the Internet by gamma-ray or alpha particle energy range and/or parent half-life, mass, and proton or neutron number. An example of a search for is shown in figure 2. Each gamma-ray found is linked to the other decay data for the parent.

Footnotes and References

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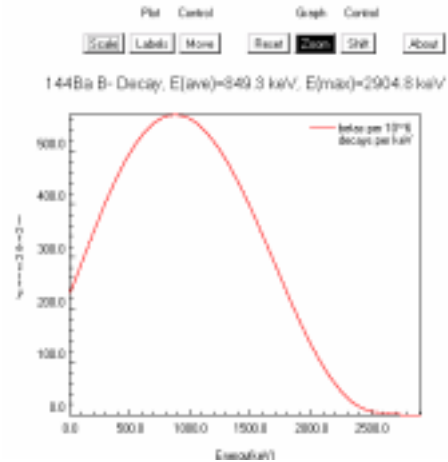


Figure 1. Beta spectrum for ¹⁴⁴Ba decay

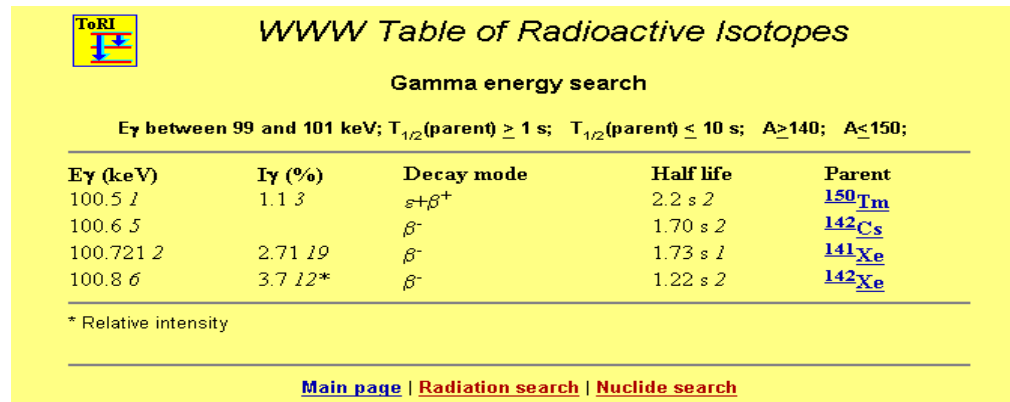


Figure 2. Search of the WWW Table of Radioactive Isotopes for gamma rays with E_γ between 99-101 keV from a parent with t_{1/2}=1-10 seconds and mass from 140-150.